

What is claimed is:

1. A producing method of a bearing apparatus, said bearing apparatus comprising a hollow shaft provided around its outer peripheral surface with a bearing fitting region, and a rolling bearing having an inner ring fitted around said bearing fitting region of said hollow shaft, said hollow shaft has a female spline which is fitted to a male spline formed on an outer peripheral surface of a drive shaft, a shaft end of said hollow shaft being bent outwardly in a diametrical direction, thereby being caulked on an outer end surface of said inner ring of said rolling bearing, wherein

said method comprising the steps of:

subjecting an inner peripheral surface of said hollow shaft to a primary working for forming said female spline;

caulking the shaft end of said hollow shaft on the outer end surface of said inner ring of said rolling bearing after said female spline is formed; and

subjecting said female spline of said hollow shaft to a secondary working after caulking, and wherein

said secondary working is a correcting working for correcting a deformed portion generated by said caulking so that said female spline formed by said primary working can be fitted to the male spline of said drive shaft.

2. A producing method of a bearing apparatus, said bearing apparatus comprising a hollow shaft provided around its outer peripheral surface with a bearing fitting region, and a rolling bearing having an inner ring fitted around said bearing fitting region of said hollow shaft, said hollow shaft has a female spline which is fitted to a male spline formed on an outer peripheral surface of a drive shaft, a shaft end of said hollow shaft being bent outwardly in a diametrical direction, thereby being caulked on an outer end surface of said inner ring of said rolling bearing, wherein

said method comprising the steps of:

10 caulking the shaft end of said hollow shaft on an outer end surface of said inner ring; and

forming a female spline on an inner peripheral surface of said hollow shaft after caulking.